Texas Instruments

PMP4389 Test Procedure

China Power Reference Design

REV A

11/22/2013

1 GENERAL

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4389.

1.2 REFERENCE DOCUMENTATION

Schematic: PMP4389_SCH
Assembly: PMP4389_PCB
BOM

1.3 TEST EQUIPMENTS

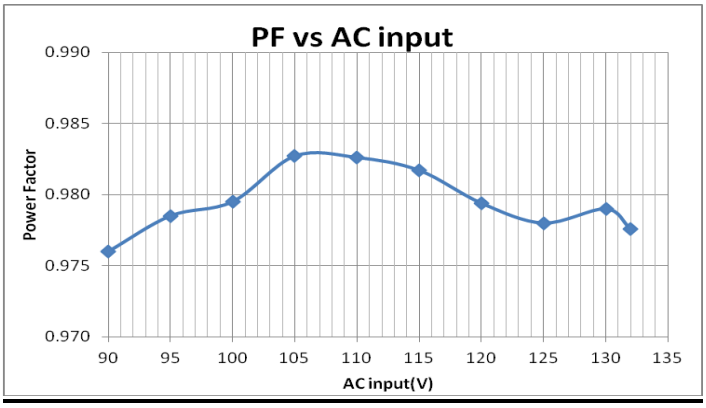
Power-meter: YOKOGAWA WT210
Multi-meter(current): Fluke 3345A
Multi-meter(voltage): Fluke 287
AC Source: Chroma 61530
LED load: Chroma 63110A module

2 INPUT CHARACTERISTICS

3 Otherwise Specified, the test is under the condition With 10 series LED Load.

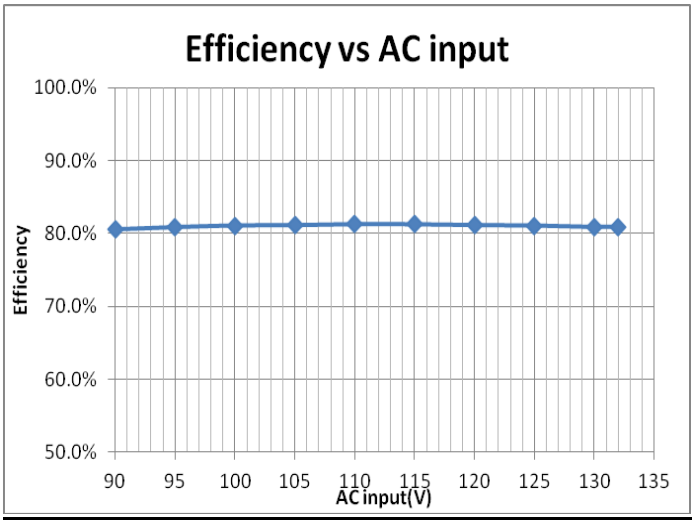
3.1 POWER FACTOR

Vin(Vac)	Freq(Hz)	PF	Pass/Fail
90	60	0.976	
95	60	0.9785	
100	60	0.9795	
105	60	0.9827	
110	60	0.9826	
115	60	0.9817	
120	60	0.9794	
125	60	0.978	
130	60	0.979	
132	60	0.9776	



3.2 EFFICIENCY

Vin(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	η(%)
90	4.534	30.55	0.1195	3.65	80.52%
95	4.532	30.56	0.1199	3.66	80.85%
100	4.612	30.58	0.1223	3.74	81.09%
105	4.741	30.6	0.1257	3.85	81.13%
110	4.822	30.62	0.128	3.92	81.28%
115	4.842	30.62	0.1285	3.93	81.26%
120	4.864	30.62	0.1289	3.95	81.15%
125	4.957	30.63	0.1312	4.02	81.07%
130	5.106	30.66	0.1347	4.13	80.88%
132	5.112	30.66	0.1349	4.14	80.91%

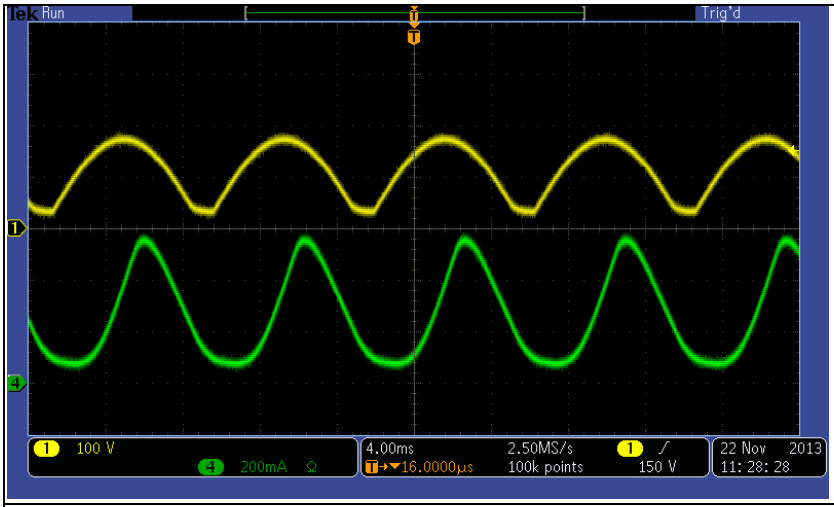


4 OUTPUT CHARACTERISTICS

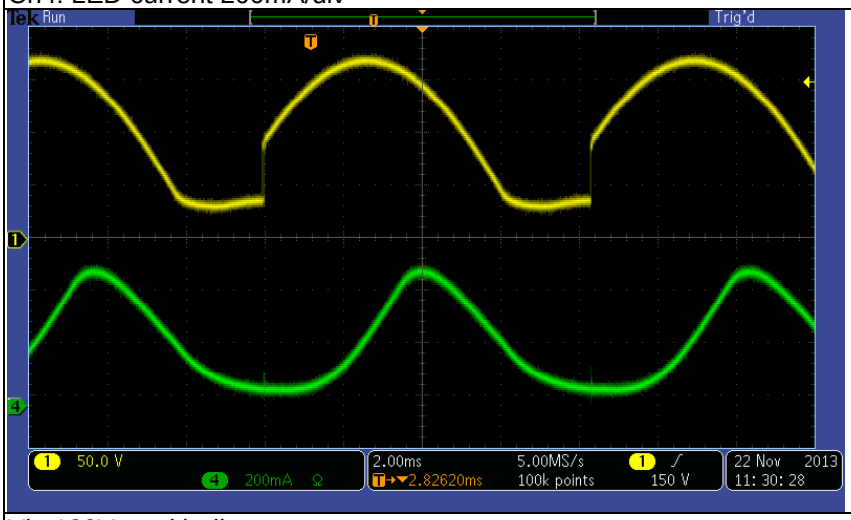
4.1 OUTPUT VOLTAGE RANGE

ITEM	Vout (V)	Iout(A)	Pass/Fail
Vin=120Vac	30.62	0.129	
	27.8	0.133	
	25	0.135	

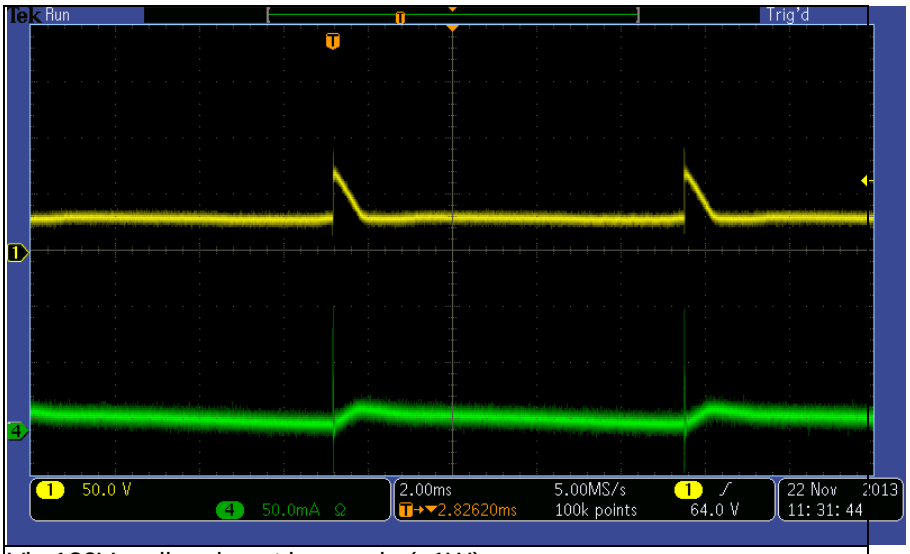
4.2 Output ripple current and dimming waveform



Vin:120Vac without dimmer
Ch1: Rectifier voltage(BR) , 100V/div
Ch4: LED current 200mA/div



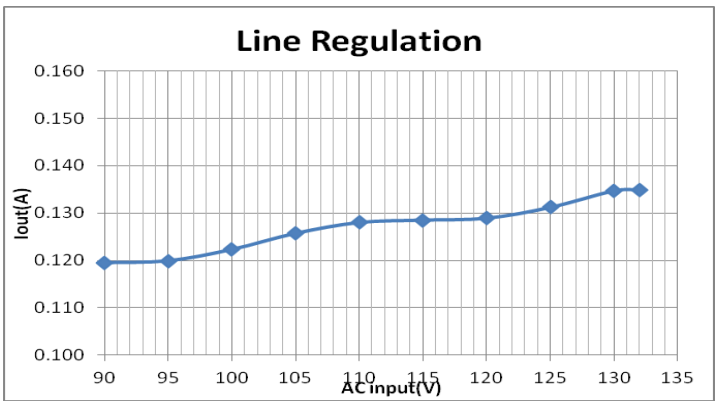
Vin:120Vac with dimmer
Ch1: Rectifier voltage(BR) , 50V/div
Ch4: LED current 200mA/div



Vin:120Vac dimming at low angle (<1W)
Ch1: Rectifier voltage(BR) , 50V/div
Ch4: LED current 50mA/div

4.3 LINE REGULATION CURVE

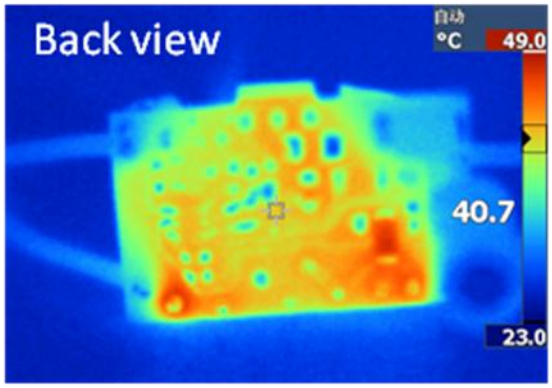
Vin(Vac)	Freq(Hz)	Io(Arms)	%	Pass/Fail
90	60	0.1195	-6.2	
95	60	0.1199	-5.9	
100	60	0.1223	-4.0	
105	60	0.1257	-1.3	
110	60	0.128	0.5	
115	60	0.1285	0.9	
120	60	0.1289	1.2	
125	60	0.1312	3.0	
130	60	0.1347	5.8	
132	60	0.1349	5.9	

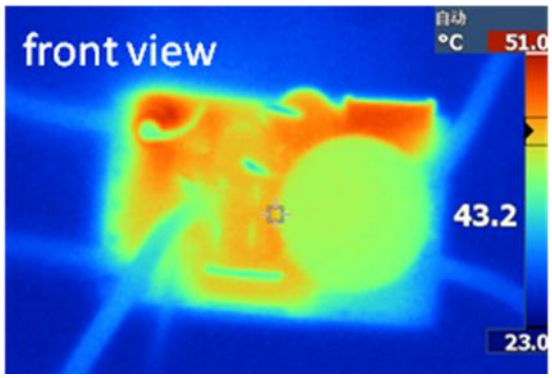


4.4 Dimmer Compatibility test

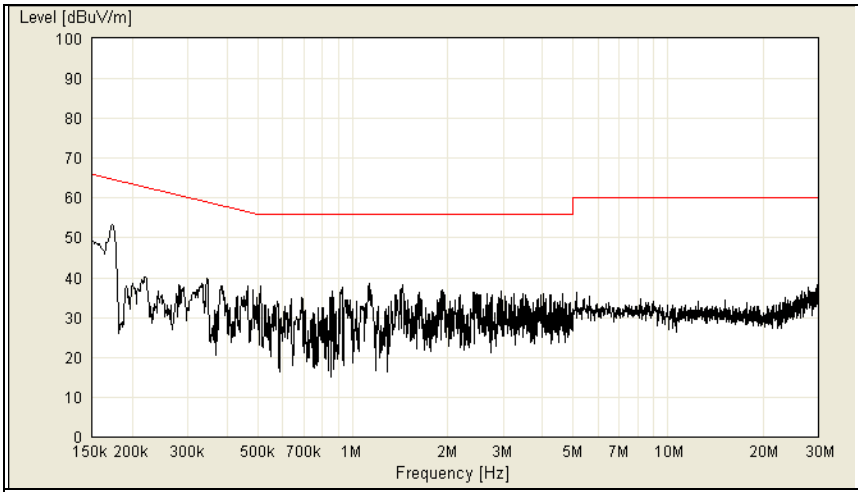
Condition: 110VAC, 10LED in series			
Item	MFR	Series	Flicker-Free
1	Lutron	DV-603P	Y
2	LEVITON	IPI06	Y
3	Lutron	LXLV-600PL	Y
4	Lutron	TT-300NLH-WH	Y
5	Lutron	AY-600PNL-8A	Y
6	Lutron	TG-600PH-WH	Y
7	Lutron	S-600P	Y
8	Lutron	TG-603PR-WH	Y
9	HSIEN LONG	YM-2508A	Y

5 Thermal Test





6 EMI Test



120Vin, full load

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